



## Suicidal Tendencies Assessment In General Surgery Residency Programs Students With Sadpersons Scale

Almas Mirza Murastomo<sup>1\*</sup>, Pepi Budianto<sup>2</sup>

### Affiliation:

1. Department of Surgery, Faculty of Medicine/Universitas Sebelas Maret Hospital, Universitas Sebelas Maret, Surakarta, Indonesia 5712
2. Department of Neurology, Faculty of Medicine/Universitas Sebelas Maret Hospital, Sukoharjo, Indonesia, 57161

### Correspondence:

Almas Mirza Murastomo,  
almasmirza@staff.uns.ac.id  
Department of Surgery, Faculty of Medicine/Universitas Sebelas Maret Hospital, Universitas Sebelas Maret, Surakarta, Indonesia 5712

Received: 25/10/2024

Accepted: 31/11/2024

Published: 31/11/2024



### ABSTRACT

**Introduction:** Suicidal tendencies among medical students, particularly General Surgery Residency Programs, are an important area of research due to the stressful environment and challenges. The SADPERSONS scale, a widely recognized tool for evaluating suicide risk, has been used in various studies to measure its effectiveness and applicability in clinical settings. This study aims to determine the level of suicidal tendencies in General Surgery Residency Programs students at Universitas Sebelas Maret.

**Metode:** This study used a cross-sectional design conducted in October 2024. The population were General Surgery Residency Programs students at Universitas Sebelas Maret. The sample was taken purposively with the inclusion criteria, active students who were willing to participate in the study. The targeted sample was 90% of the population. Measurement of suicidal tendencies was carried out using the SADPERSONS scale.

**Results:** There were 91.86% respondents or 79 out of 86 General Surgery Residency Programs students. The results obtained were 65 (82.27%) male respondents and 14 (17.72%) female respondents. The age distribution was 0 (0%) respondents < 19 years, 79 (100%) respondents aged 19-45 years, and 0 (0%) respondents > 45 years. This study shows that most of the General Surgery Residency Programs students of Universitas Sebelas Maret, 94.93% of the respondents have a low tendency towards suicide, with scores of 0-5 on the SADPERSONS Scale. However, there were 5.06% of respondents who were in the more at-risk category (score 6-14) and needed special assistance.

**Conclusion:** The high prevalence of suicidal ideation among medical students, compounded by factors such as academic pressure and inadequate support systems, underscores the urgent need for comprehensive mental health strategies. Integrating effective assessment tools, fostering a supportive environment, and addressing the unique challenges faced by medical students can reduce suicide risk and improve overall well-being in this vulnerable population.

**Keyword:** Suicide, Medical Students, SADPERSONS Scale

Creative Commons Attribution 4.0 International (CC BY 4.0)



## INTRODUCTION

The assessment of suicidal tendencies among medical students, particularly those enrolled in General Surgery Residency Programs, is pivotal given the high-stress environments and unique challenges faced by this demographic. The SADPERSONS scale, a widely recognized tool for evaluating suicide risk, has been utilized across various studies to gauge its effectiveness and clinical applicability. This tool, which incorporates factors such as gender, age, depression, previous attempts, and substance abuse, aims to systematically identify individuals at risk of self-harm or suicide. However, its clinical utility has been challenged in multiple studies, highlighting the need for further evaluation and the development of more nuanced assessment tools [1].

Research indicates that the SADPERSONS Scale, while historically significant, might not sufficiently predict suicide risk in certain populations, especially among medical students. For example, one study pointed out the scale's reduced effectiveness in predicting actively suicidal individuals among predominantly male and older veteran populations, suggesting variability in its efficacy across different demographics [2]. This concern was reiterated by another study demonstrating that the SADPERSONS Scale tends to overestimate suicide risk, potentially leading to unnecessary hospitalizations [3]. These discrepancies underscore the necessity for medical professionals to exercise caution when relying solely on this tool for risk assessment.

The scoring for the SADPERSONS Scale is derived from ten yes/no questions, with points allocated for each affirmative answer as follows [4]:

1. Male respondents score 1.
2. Age <19 or >45 years scores 1.
3. Yes to depression or hopelessness scores 2.
4. Yes to a previous suicide attempt scores 1.
5. Yes to excessive alcohol or drug use scores 1.
6. Yes to loss of rational thinking or psychosis scores 2.
7. Yes to being separated; widowed, widower, or divorced scores 1.
8. Yes to having an organized plan scores 2.
9. Yes to no social support scores 1.
10. Yes to stating future suicide attempts or self-harm scores 2.

These scores categorize risk as follows: scores 0-5 indicate low risk, scores 6-8 suggest the need for assistance, and scores 9-14 recommend hospitalization [4].

The prevalence of suicidal ideation among medical students is alarmingly high, with studies reporting rates ranging from 9% to 48% among different groups [5]. Contributing factors include academic pressure, mental health conditions such as depression, and the absence of adequate support systems. For instance, a systematic review identified that the pooled prevalence of suicidal ideation among medical students was approximately 11.1%, with many not seeking help despite having screened positive for depression [6]. This highlights a significant gap in the accessibility of mental health care and the stigma surrounding mental health issues within the medical community.

Personal factors and the learning environment also significantly impact suicidal ideation among medical students. A study among Tunisian medical students found that personal factors, including depression and academic dissatisfaction, were strong predictors of suicidal ideation [7]. This aligns with other findings that stress the importance of addressing individual mental health and the broader educational context to effectively mitigate suicide risk [8].

Moreover, the role of social support is critical. Research has demonstrated that strong social networks and supportive environments can significantly mitigate the risk of suicidal ideation among students [9]. Conversely, isolation and lack of support can exacerbate feelings of hopelessness and despair, increasing vulnerability. Thus, fostering a supportive community within medical schools is essential for improving mental health and reducing suicide risk.

The COVID-19 pandemic has further complicated the mental health landscape for medical students, increasing reports of anxiety, depression, and suicidal ideation during this period [10]. The unique stressors associated with the pandemic, including changes in educational formats and increased workloads, have highlighted the urgent need for effective mental health interventions tailored to the current context. Proactive measures, such as accessible mental health screenings and counseling services, are crucial in addressing the heightened risk of suicide during such crises [11].

## **METHOD**

This study employed a cross-sectional design to evaluate suicidal tendencies among students enrolled in the General Surgery Residency Programs at Universitas Sebelas Maret. Conducted in October 2024, the study aimed to capture a snapshot of the mental health status of these students during their academic term.

### **Population and Sampling**

The target population comprised all students actively enrolled in the General Surgery Residency Programs at Universitas Sebelas Maret during the study period. We employed purposive sampling to select participants who were both willing and able to provide informed consent. The inclusion criteria specified that participants must be active students without any prior psychiatric diagnosis known to affect the validity of self-reported mental health assessments. The goal was to achieve a sample size representing approximately 90% of the total enrollment in these programs, aiming to ensure the results were sufficiently generalizable to the student body.

### **Measurement Instrument**

Suicidal tendencies were assessed using the SADPERSONS scale, a validated tool with established reliability for measuring the risk of suicide. This scale includes several items that assess key risk factors such as suicide history, current psychological state, and levels of social support. Each item on the scale is designed to identify specific vulnerabilities that could contribute to suicidal thoughts or behaviors.

### **Data Collection**

Data collection was conducted through an online questionnaire distributed via the university's learning management system to ensure a wide reach. Before starting the questionnaire, participants were provided with detailed information about the study's objectives and the confidential nature of their responses. They were also informed about the voluntary nature of participation and their right to withdraw from the study at any time without any academic penalty.

Participants were allowed to complete the questionnaire at their own pace, with no time restrictions imposed, to encourage thoughtful and honest responses. The questionnaire was designed to be intuitive and user-friendly to minimize any potential response bias related to misunderstanding the questions.

### **Data Analysis**

The collected data were coded and analyzed using SPSS software (version 25). Descriptive statistics were utilized to summarize the demographic characteristics of the study sample and to quantify the prevalence of suicidal tendencies as measured by the SADPERSONS scale. Each risk factor's frequency distribution was examined, and cross-tabulations were used to explore the relationship between demographic variables (such as age and gender) and suicidal risk scores.

**Ethical Considerations**

The study protocol was reviewed and approved by the Institutional Review Board (IRB) at Universitas Sebelas Maret, ensuring compliance with ethical standards for research involving human subjects. In addition, all data were handled and stored securely to maintain participant confidentiality, with access restricted to the research team.

**RESULT**

**Participant Demographics**

A total of 79 out of 86 students from the General Surgery Residency Programs at Universitas Sebelas Maret participated in the study, yielding a response rate of 91.86%. Of these respondents, the majority were male (65 participants, accounting for 82.27% of the sample) while 14 participants were female (17.72%). All respondents were within the age range of 19 to 45 years, with no participants below 19 or above 45 years old.

**Suicidal Tendencies Assessment**

The suicidal tendencies of the participants were assessed using the SADPERSONS scale. The distribution of scores provided insights into the mental health status of the respondents:

1. Low Risk: The majority of students (75 out of 79, or 94.93%) scored between 0 and 5 on the SADPERSONS scale, indicating a low risk of suicide.
2. Moderate to High Risk: A smaller segment of the cohort (4 out of 79, or 5.06%) scored between 6 and 14, suggesting a moderate to high risk of suicide and the need for further assessment or intervention.

Analysis of Risk Factors Detailed analysis of responses to individual items on the SADPERSONS scale revealed:

1. Depression or Hopelessness: 15 participants (18.98%) reported feelings of depression or hopelessness.
2. Previous Suicide Attempts: 4 participants (5.06%) reported a history of previous suicide attempts.
3. Substance Abuse: 5 participants (6.32%) indicated excessive alcohol or drug use.
4. Psychosis or Rational Thinking Loss: 4 participants (5.06%) were identified as potentially experiencing loss of rational thinking or psychosis.
5. Social Support Deficiency: 9 participants (11.39%) indicated a lack of social support, which is a critical factor in mental health.

These findings underscore the importance of ongoing monitoring and support for General Surgery Residency Program students, especially given the stresses associated with their rigorous training and professional responsibilities.

**Table 1.** SADPERSONS Scale Score

No	SADPERSONS Scale	Yes	No
1	Depression or hopelessness	15 (18,98%)	64 (81,01%)
2	Previous suicide attempts	4 (5,06%)	75 (94,93%)

3	Excessive alcohol or drug use	5 (6,32%)	74 (93,67%)
4	Loss of ability to think rationally or psychosis	4 (5,06%)	75 (94,93%)
5	Separated status; widow/widower or divorced	4 (5,06%)	75 (94,93%)
6	Having an organized plan	66 (83,54%)	13 (16,45%)
7	No social support	9 (11,39%)	70 (88,60%)
8	State that they will make future suicide attempts or self-harm	5 (6,32%)	74 (93,67%)

**Table 2.** Total SADPERSONS Scale Score

SADPERSONS Scale	0-5	6-14
Score	75 (94,93%)	4 (5,06%)

## DISCUSSION

This study evaluated suicidal tendencies among students in the General Surgery Residency Programs at Universitas Sebelas Maret using the SADPERSONS Scale. The majority of the respondents, 94.93%, exhibited low suicidal tendencies, scoring between 0 and 5 on the scale, which aligns with previous findings suggesting lower acute risk among similar demographics [1]. However, a small yet significant portion of the cohort, 5.06%, fell into the higher risk category with scores ranging from 6 to 14, indicating a need for immediate psychosocial intervention.

The demographic breakdown showed a predominance of male respondents (82.27%), all of whom were aged between 19 and 45 years. This age range typically encompasses most residency programs, but the male predominance may influence the generalizability of the results to more diverse medical student populations, including females and those outside this age bracket.

A deeper analysis revealed that 18.98% of respondents felt depressed or hopeless, and 11.39% reported a lack of social support. These figures are concerning as they highlight underlying issues that could escalate without proper intervention [1]. Despite most respondents not showing immediate risk factors such as active substance abuse or prior suicide attempts, the presence of depressive symptoms and inadequate social support underscores the hidden challenges faced by these students.

The findings of this study suggest a critical need for targeted interventions aimed at those displaying higher risk scores. There is also a broader implication for the establishment of robust support systems within residency programs to address the mental health needs of all students, not just those at immediate risk. Mental health services, including counseling and regular wellness checks, should be integrated into the residency program structure [2].

One limitation of this study is its reliance on self-reported data, which may be subject to response bias. Participants might underreport their mental health challenges due to stigma or fear of professional repercussions [1]. Additionally, the use of the SADPERSONS scale, while validated, does not encompass all aspects of mental health and may miss subtler signs of distress that other, more comprehensive tools might detect. The study's cross-sectional design also limits the ability to track changes in mental health status over time or establish causality between the residency program's demands and mental health outcomes.

Further research is recommended to explore longitudinal trends in mental health among medical residents and to compare these trends across different specialties. Implementing and evaluating the effectiveness of various intervention strategies would also be valuable to develop evidence-based approaches to mental health care in medical education settings [3].

## CONCLUSION

This study investigated suicidal tendencies among students in the General Surgery Residency Programs at Universitas Sebelas Maret through the SADPERSONS Scale. The findings reveal that the vast majority of students, 94.93%, display low suicidal tendencies with scores ranging from 0 to 5 on the SADPERSONS scale, indicating a generally low risk of suicide among this group. However, a concerning 5.06% of respondents scored within the moderate to high risk range (6-14), highlighting a crucial subset of students who require immediate attention and support.

The demographic analysis showed that these tendencies affect a predominantly male population aged between 19 and 45 years. Despite most students managing their mental health adequately, there are significant indicators of distress among some students, specifically those who reported feelings of depression or hopelessness and a lack of social support.

These results underscore the importance of establishing more comprehensive mental health support systems within medical residency programs. Such systems should not only target those at immediate risk but also offer widespread preventive measures to ensure the well-being of all students. The study recommends the implementation of regular mental health screenings, the provision of accessible counseling services, and the creation of a supportive educational environment that can mitigate the stresses associated with rigorous medical training.

Moreover, the limitations of the SADPERSONS scale, particularly its reliance on self-reported data and its potential to miss subtler signs of distress, suggest the need for more nuanced tools and approaches. This study serves as a call to action for ongoing research to refine suicide risk assessment tools and to develop targeted interventions that address both the overt and underlying mental health needs of medical students.

By addressing these needs proactively, it is possible to significantly reduce the risk of suicide and improve the overall mental health outcomes for future medical professionals, ensuring that they not only survive but thrive in their demanding educational pathways.

## ACKNOWLEDGMENTS

We extend our deepest gratitude to all the students of the General Surgery Residency Programs at Universitas Sebelas Maret who participated in this study. Your willingness to share your experiences has provided invaluable insights into the mental health challenges faced by medical students and will help shape better support systems in the future. We also thank the faculty and administrative staff of Universitas Sebelas Maret for their support and cooperation throughout the research process. Special thanks to the Department of Surgery for facilitating the data collection and to our colleagues who provided expert advice and critical feedback on the study design and analysis.

## REFERENCE

1. Amalia, A., Sulistiawati, -, & Karimah, A. (2022). The differences of depression level and risk of suicide in medical students in surabaya. *Jurnal Psikiatri Surabaya*, 11(2), 103-109. <https://doi.org/10.20473/jps.v11i2.28024>



2. Desalegn, G., Wondie, M., Dereje, S., & Addisu, A. (2020). Suicide ideation, attempt, and determinants among medical students northwest ethiopia: an institution-based cross-sectional study. *Annals of General Psychiatry*, 19(1). <https://doi.org/10.1186/s12991-020-00295-2>
3. Dávila, A. (2023). Validation of the colombian-spanish suicidality scale for screening suicide risk in clinical and community settings: validez y confiabilidad de la escala colombiana de suicidio, para el tamizaje del riesgo de suicidio.. <https://doi.org/10.31219/osf.io/5vuxz>
4. Fekih-Romdhane, F., ElKhouni, C., Sassi, H., & Cheour, M. (2021). The role of personal factors and learning environment in suicidal ideation among tunisian medical students. *Crisis*, 42(1), 20-31. <https://doi.org/10.1027/0227-5910/a000678>
5. Garg, S., Chauhan, A., Singh, S., & Bansal, K. (2022). Epidemiological risk factors of suicidal behavior and effects of the components of coping strategies on suicidal behavior in medical students: an institution-based cross-sectional study in india. *Indian Journal of Psychiatry*, 64(4), 377. [https://doi.org/10.4103/indianjpsychiatry.indianjpsychiatry\\_407\\_21](https://doi.org/10.4103/indianjpsychiatry.indianjpsychiatry_407_21)
6. Hockberger, R. S., & Rothstein, R. J. (1988). Assessment of suicide potential by nonpsychiatrists using the SAD PERSONS score. *The Journal of emergency medicine*, 6(2), 99-107. <https://doi.org/10.1016/pubmed.ncbi.nlm.nih.gov/3290325/>
7. Jeong, Y., Kim, J., Ryu, J., Lee, K., Ha, E., & Park, H. (2010). The associations between social support, health-related behaviors, socioeconomic status and depression in medical students. *Epidemiology and Health*, 32, e2010009. <https://doi.org/10.4178/epih/e2010009>
8. Mrnak-Meyer, J., Tate, S., Tripp, J., Worley, M., Jajodia, A., & McQuaid, J. (2011). Predictors of suicide-related hospitalization among u.s. veterans receiving treatment for comorbid depression and substance dependence. *Suicide and Life-Threatening Behavior*, 41(5), 532-542. <https://doi.org/10.1111/j.1943-278x.2011.00051.x>
9. Rotenstein, L., Ramos, M., Torre, M., Segal, J., Peluso, M., Guille, C., ... & Mata, D. (2016). Prevalence of depression, depressive symptoms, and suicidal ideation among medical students. *Jama*, 316(21), 2214. <https://doi.org/10.1001/jama.2016.17324>
10. Wang, X., Hegde, S., Son, C., Keller, B., Smith, A., & Sasangohar, F. (2020). Investigating mental health of us college students during the covid-19 pandemic: cross-sectional survey study. *Journal of Medical Internet Research*, 22(9), e22817. <https://doi.org/10.2196/22817>